Materials safety data sheet

NANOTECH INDUSTRIAL SOLUTIONS

ENGINEERING A STRONGER TOMORROW

Complying with 1907/2006/EEC Regulation of 18 December 2006 ("REACH Regulation") and REGULATION (EC) No 1272/2008 (CLP)

Section 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

REACH Product name: NanoLub® R oil concentrate
Trade names: NanoLub® GE-S4100 Classic Engine Oil Additive
Synonyms: NanoLub® Oil Concentrate RC-S
Chemical formula: Mixture
Product type: Viscous liquid
Cas number: Not applicable
EC number: Not applicable
Use of the substance/preparation: Additive for Mineral and PAO lubricating oils.

Company/undertaking identification
Supplier/Manufacturer: Nanotech Industrial Solutions
2323 Randolph Avenue
Avenel, NJ 07001
USA

E-mail address of person responsible for this SDS: george@nisusacorp.com
Emergency telephone number: 1.732.313.0020
Fax: 1.732.215.4978

Section 2. HAZARDS IDENTIFICATION

According to EC Directive 2001/58/EC
Most Important Hazards
Irritating to eyes, respiratory system and skin

Classification
Xi- Irritant

GHS-Classification
Hazards Statements
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation

Signal Word
Warning

See section 11 for more detailed information on health effects and symptoms.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation:

Ingredient name	CAS number	%	EC number	EU Classification
Petroleum distillates and derivatives	64742-65-0	60-95	265-169-7	-
NanoLub R powder, inorganic fullerene-like tungsten disulfide	12138-09-9*	5-40	235-243-3	Xi; R36/37/38

* The Risk phrases, the CAS number and the EC number are applicable for tungsten sulfide.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.

Section 4. FIRST AID MEASURES

Eyes contact: In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.

Skin contact: In case of contact with skin wash off immediately with soap and plenty of water, and seek medical advice.

Inhalation: Remove the casualty into fresh air and keep him calm. Apply artificial respiration if necessary and get medical attention immediately.

Ingestion: Wash mouth thoroughly with plenty of water. Get medical attention immediately. Do **NOT** induce vomiting.

Expected delayed effects: N/A

See section 11 for more detailed information on health effects and symptoms.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable: Carbon-dioxide, dry powder, foam or water fog.

Not suitable: N/A

Special exposure hazards: N/A

Hazardous thermal decomposition products: Aldehydes, alkyl mercaptans, carbon dioxide and carbon monoxide, hydrogen sulfide, nitrogen oxides, phosphorous oxides, sulfur oxides, toxic fumes, various hydrocarbons and dense smoke.

Special protective equipment for fire fighters: Fire Fighting should wear positive self-contained breathing apparatus (SCBA) and full turnout gear.

Remark: Move containers from fire area if possible to do so without risk.

Section 6: Accidental Release Measures

Personal precautions: Wear boots, gloves and face protecting device. Spilt product presents a significant slip hazard.

Environmental precautions: Do not let this chemical enter the environment.

Methods for cleaning up

Small spill: If possible pick up mechanically. Dilute remaining rest with water and pick up with non combustible absorbent material (sawdust, sand, universal binder)

Large spill: As for small spill

Personal Protection in Case of Large Spill: Safety glasses. Full suit. Suitable respirator. Boots. Gloves. A self- contained breathing apparatus should be used to avoid inhalation of the product.

Section 7: Handling and Storage

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. If handled at elevated temperatures or with high speed mechanical equipment, vapors or mists might be released and so such handling requires a well ventilated workplace. Do not permit eating/ drinking/ smoking near the material.
Keep away from strong oxidizing agents.
Keep away from heat, sparks and open flame.
Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

Storage: Keep containers tightly closed, in dry and cool place.
Do not store together with strong oxidizing agents.
Avoid prolonged storage at elevated temperatures.

Specific use(s): N/A

Section 8: Exposure Control / Personal Protection

Exposure limits values:

Ingredient name	Occupational exposure limits
Petroleum distillates and derivatives	According to the manufacturer: OSHA-PEL 5 mg/m^3 (TWA), oil mist ACGIH-TLV 5 mg/m^3 (TWA), oil mist
NanoLub R powder, inorganic fullerene-like tungsten disulfide	ACGIH-TLV 5 mg(W)/m^3 (TWA), 10 mg(W)/m^3 (STEL)

Exposure controls

Occupational exposure controls: Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommend exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Respiratory protection: Suitable respirator. Be sure to use an approved/certified or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hand protection: Wear protective gloves to prevent skin exposure, such as nitrile rubber.

Eye protection: Wear protective safety glasses.

Skin protection: Wear appropriate long-sleeved clothing to minimize skin contact.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9: Physical and Chemical Properties

General information:

Physical state: Viscous liquid

Color: Black

Odor: Petroleum, mild

Odor threshold: N/A

Molecular weight: Mixture

pH: N/A

Boiling point/boiling range: N/A

Flash point: > 250°C

Flammability: N/A

Explosive properties: N/A

Oxidizing properties: N/A

Vapor pressure: N/A

Water solubility: Insoluble

Octanol/Water partition coefficient: N/A

Viscosity Range (40°C): 500 - 570 cSt

Vapor density: N/A

Evaporation rate (butyl acetate=1): N/A

VOC: N/A

Apparent (Bulk) Density: 1.10 - 1.4 g/cc

Decomposition range: N/A

Melting point/melting range: N/A

Other information:

Miscibility: N/A
Fat solubility: N/A
Conductivity: N/A
Melting point/melting range: N/A

Gas group: N/A
Auto-ignition temperature: N/A

Section 10: Stability and Reactivity

Stability: Stable under normal handling and storage conditions described in section 7.

Conditions to avoid: Avoid heat, sparks and open flame. Avoid prolonged storage at elevated temperatures and temperatures above 150°C.

Materials to avoid: Strong oxidizing agents.

Hazardous Decomposition products: Aldehydes, alkyl mercaptans, CO_X, SO_X, NO_X, PO_X, hydrogen sulfide, various hydrocarbons and dense smoke that are toxic and irritant fumes.

Hazard polymerization: N/A

Section 11: Toxicological Information

Potential acute health effects

Acute toxicity: N/A

Irritation and corrosivity:

Skin contact: Causes irritation to skin.

Eyes contact: Causes irritation to eyes.

Inhalation: Irritating. May cause irritation to nose, throat and airways. May cause headache.

Ingestion: May cause irritation if swallowed. May cause stomach or intestinal upset such as: nausea, vomiting and diarrhea.

Sensitization: N/A

CMR Effects
Carcinogenicity: According to the manufacture: the material cannot be classified with regard to carchinogenety. This material is not listed as a carcinogen by the international Agency for Research on Cancer, the National Toxicology Program, or the Occupational Safety and Health Administration.

Mutagenicity: Not applicable

Reproductive toxicity: Not applicable

Other effects
Over exposure signs/symptoms: N/A

Target organs: No specific data.

Special Remarks on Toxicity to animals: N/A

Section 12: Ecological Information

Ecotoxicity

Aquatic ecotoxicity: According to the manufacturer: not expected to be ecotoxic to fish/daphnia/algae. Not expected to be inhibitory to sewage bacteria. Risk for contamination of earth, soil and water.

Mobility: Mobile liquid. Insoluble in water. Involatile. Emulsifiable.

Persistence and Degradability: Inherently non-biodegradable.

Bioaccumulative potential: Bio-accumulative based on logP values of constituents.

Result of PBT assessment (if CSR is required): N/A

Other adverse effects:
Substances which have an unfavorable influence on the oxygen balance and can be measured using parameters such as BOD, COD, etc.: N/A

Substances, which contribute to eutrophication: N/A

Remarks: N/A

Section 13: Disposal Considerations

Methods of disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Hazardous waste: N/A

Section 14: Transport Information

International transport regulations

Regulatory Information	UN number	Proper shipping name	classes	Packing group	Label	Additional information	Marine pollutant
ADR/RID Class	-	-	-	-	-	-	-
ADNR Class	-	-	-	-	-	-	-
IMDG class	-	-	-	-	-	-	-
IATA class	-	-	-	-	-	-	-

National Fire Protection Association Hazard Ratings- NFPA (R):

2 Health Hazard Rating – Moderate

0 Flammability Rating – Minimal

0 Instability Rating – Minimal

Section 15: Regulatory Information

Classification and labeling according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use:

Xi- Irritant

Risk phrases:

R36/37/38: Irritating to eyes, respiratory system and skin.

Safety phrases:

S24/25: Avoid contact with skin and eyes.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Classification and labeling according to EU Regulation (EC) 1272/2008 (CLP Regulation) and Globally Harmonized System (GHS):

Signal Word Warning

Hazards Statements
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.

Precautionary Statements
P262: Do not get in eyes, on skin, or on clothing.
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

National Paint & Coating Hazardous Materials Identification System – HMIS (R):

2 Health Hazard Rating -Moderate
0 Flammability Rating - Minimal
0 Instability Rating - Minimal
B Personal Protection

Section 16: Other Information

Full text of R-phrases referred to in sections 2 and 3:
R36/37/38: Irritating to eyes, respiratory system and skin.

Full text of Hazards Statements referred to in sections 2 and 3:
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.

Training advice: Before using/handling the product one must read carefully present MSDS.

Recommended restriction: N/A

Key Legend Information:
ACGIH- American Conference of Governmental Industrial Hygienists
OSHA- Occupational Safety and Health Administration
NTP- National Toxicology program
IARC- International Agency for Research on Cancer
ND- Not Determined
N/A- Not available
R-phrases- Risk phrases

S-phrases- Safety phrases

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According to Regulation (EC) No. 1907/2006 (REACH), Annex II, Commission Directive 2001/59/EC and REGULATION (EC) No 1272/2008 (CLP).